

REMARKS

By the present amendment, claims 1 to 3 and 5 to 8 are pending in the application. Claim 1 is the only independent claim.

Claim Amendments

In claim 1, the content of the "coat layer" has been defined as --consisting of--.

Claim 1 has also been amended to recite --the coverage of said coat layer is from 50% to less than 100%--. Support for this amendment may be found in prior, now canceled, dependent claim 4.

§102/§103

In the Office Action mailed May 29, 2008, claims 1, 2, 7 and 8 were rejected under 35 U.S.C. §102(b) as being anticipated by WO 02/103080 to Nakayama et al.

The Office Action notes that EP 1 405 933 corresponds to WO 02/103080 and references EP 1 405 933 as an English translation of WO 02/103080.

Claims 1 to 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over USPA 2003/0072962 to Matsuzaki et al.

Claims 3 to 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 02/103080 to Nakayama et al.

These rejections as applied to the amended claims, are respectfully traversed.

The Present Invention

The precoated metal sheet of the present invention, as defined in claim 1, comprises a stack of a coat layer and an organic resin layer on a metal or plated metal sheet, with the coat layer being only a metal oxide and/or metal hydroxide, wherein the coverage of the coat layer is from 50% to less than 100%. This precoated metal sheet exhibits excellent coating material adhesion.

Patentability

Rejection of claims 1, 2, 7 and 8 under 35 U.S.C. §102(b)

Claim 1, as amended, includes the feature of prior dependent claim 4 that the coverage of the coat layer is from 50% to less than 100%. Nakayama et al. WO 02/103080 cited by the Office Action does not disclose or suggest this feature. Regarding the added feature, the specification, page 5, lines 13-18, states that it has been found that when the coverage of the coat layer being one or both of a metal oxide and a metal hydroxide is from 50 to less than 100%, the coating material adhesion is more enhanced and is equal to or greater than that of a chromate treatment. Thus, amended claim 1 is not disclosed or suggested by Nakayama et al. Claims 2, 7 and 8 are dependent on amended claim 1, and therefore they are also not disclosed or suggested by Nakayama et al.

Nakayama et al. will hereafter be discussed in more detail.

Rejection of claims 1-8 under 35 U.S.C. §103(a)

In amended claim 1, the coat layer is made up only of one or both of a metal oxide and a metal hydroxide. In contrast, Matsuzaki et al. (USPA 2003/0072962) cited by the Office Action discloses a composite oxide coating containing (α) oxide fine particles, (β) a phosphate and/or a phosphoric acid compound, and (γ) at least one metal selected from the group consisting of Mg, Mn and Al (see, e.g., paragraph 0124-0127). Components (α) and (β) of Matsuzaki et al (i.e., oxide fine particles and a phosphate and/or a phosphoric acid compound) are not included in the coat layer of the present invention. In addition, Matsuzaki et al. does not disclose or suggest that for the purpose of improvement of the coating material adhesion, a coating layer is formed only of a metal oxide and/or a metal hydroxide.

Therefore, amended claim 1 and its dependent claims are patentable over Matsuzaki et al.

Rejection of claims 3-8 under 35 U.S.C. §103(a)

Claims 3-8 are dependent claims of independent claim 1, but independent claim 1 as amended above includes the limitations of prior dependent claim 4.

EP 1405933 A1 corresponding to Nakayama et al. (WO 02/103080) cited by the Office Action against claims 3-8 states that there is no upper limit, however, when the amount (adhered amount) exceeds 1 g/m², cracks are easily generated on the surface treated film layer and it becomes difficult to form a uniform film (EP '933, page 7, lines 41-42). In other words, Nakayama et al. states that although there is no upper limit of adhered amount, too great an adhered amount causes cracks and is problematic.

In contrast, amended claim 1 restricts the coverage of the coat layer, which corresponds to the adhered amount in Nakayama et al., to 50% or more and less than 100%, so as not to totally cover the surface of a metal sheet. Moreover, in the present invention, the occurrence of cracks is not problematic, and cracks are rather used in a positive manner in the present invention, as discussed later.

The present invention relates to a precoated metal sheet, as claimed. In contrast, it is submitted that Nakayama et al. relates to a post-coated metal material. EP 1405933 A1 corresponding to Nakayama et al. states that the technology relates to a composition for metal surface treatment which makes it possible to form a surface treated film having excellent corrosion resistance after coated on the surface of a metal containing iron and/or zinc (EP '933, page 2, lines 5-7). EP '933 is silent on working a coated metal material.

Precoated metal sheets, including that of the present invention, are worked after being coated and baked, and therefore are required to have necessary characteristic features such as workability of coated film and coating material adhesion after working. In contrast,

for post-coated materials, such as those referred to in Nakayama et al., the coating operation is carried out after working of the material, and therefore the above described necessary characteristics are not needed. This is evident in that the present application, working a metal sheet after a coating is formed thereon is envisaged, and the Examples evaluate such precoated metal sheets regarding adhesion of the coated layer to the metal at worked parts, by use of the precoated metal sheet samples having crosscuts formed on the coated films (see specification, page 10, lines 12-25). In contrast, the Examples of Nakayama et al. evaluate coating material adhesion of the flat, coated metal samples prepared by electrodeposition having crosscuts formed on the coated films (in EP '993, from page 13, line 47 to page 14, line 34). Thus, it is deemed that in Nakayama et al., working a coated metal sheet is not envisaged.

In Nakayama et al., it is important to obtain a “uniform coated film”, as described above. The formation of a uniform coated film makes it possible to prevent occurrence of electrochemical local cells and maintain corrosion resistance of a coated metal material, and therefore is a technical means that is commonplace for a person skilled in the art.

In contrast, an object of the present invention is to improve corrosion resistance of a precoated metal sheet during working thereof. The applicant's invention achieved this object by forming a non-uniform coated film. In the present invention, the surface of a metal sheet is not completely covered with a coated film, i.e., the coverage of the coated layer is 50% or more to less than 100%, whereby an activity analogous to the so-called anchor effect is considered to bring about enhancement of the coating material adhesion (see the specification, page 5, lines 13-21). In addition, the specification discloses that the specified coverage can be obtained by, for example, an island-like deposited coat

layer, a coat layer having cracks reaching a substrate metal sheet, and a coat layer having crack-containing island portions (page 5, lines 24-30).

Thus, the objects, constitutional features, and technical idea of the applicant's invention are neither disclosed in nor suggested by Nakayama et al.

Therefore, amended claim 1, which includes the limitations of prior dependent claim 4, as well as the dependent claims thereon, are patentable over Nakayama et al.

CONCLUSION

It is submitted that in view of the present amendment and foregoing remarks, the application is now in condition for allowance. It is therefore respectfully requested that the application, as amended, be allowed and passed for issue.

Respectfully submitted,

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